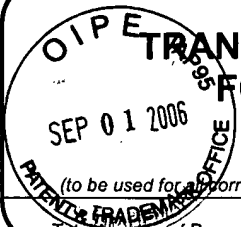


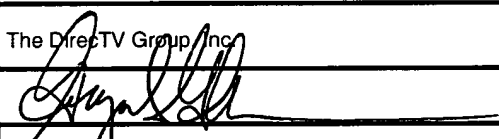
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

	Application Number	09/677,691
	Filing Date	October 2, 2000
	First Named Inventor	Robert G. Arsenault
	Art Unit	2617
	Examiner Name	SHANG, Annan Q.
	Attorney Docket Number	PD-200017
Total Number of Pages in This Submission		39

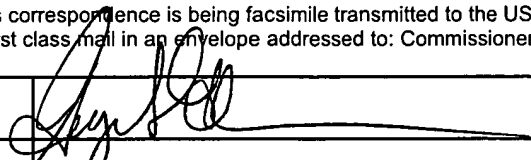
ENCLOSURES (Check all that apply)

<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input checked="" type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input type="checkbox"/> Other Enclosure(s) (please identify below):
Remarks Notice of Appeal from the Examiner to the Board of Patent Appeals and Interferences (2 pages) and Brief of Appellants (36 pages) enclosed.		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	The DirecTV Group, Inc.		
Signature			
Printed name	Georgann S. Grunebach		
Date	August 29, 2006	Reg. No.	33,179

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:			
Signature			
Typed or printed name	Georgann S. Grunebach, Reg. No. 33,179	Date	August 29, 2006

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



Due Date: October 29, 2006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:

Inventor: Robert G. Arsenault et al.

Serial No.: 09/677,691

Filed: October 2, 2000

Title: METHOD AND APPARATUS FOR
PROVIDING NON-RESIDENT PROGRAM
GUIDE INFORMATION TO A MEDIA
SUBSCRIBER

Examiner: Annan Q. Shang

Group Art Unit: 2617

Appeal No.: _____

BRIEF OF APPELLANTS

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In accordance with 37 CFR §1.192, Appellants hereby submit an Appellants' Brief on Appeal from the final rejection in the above-identified application, as set forth in the Office Action mailed June 30, 2006.

Pursuant to M.P.E.P. § 1204.01, the Applicants believe that no fees are required for this submission. Should the Applicants be mistaken and additional fees are required, please charge the fees to Deposit Account No. 50-0383. Also, please charge any additional fees or credit any overpayments to Deposit Account No. 50-0383.

I. REAL PARTY IN INTEREST

The real party in interest is THE DIRECTV GROUP, INC. the assignee of the present application.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences for the above-referenced patent application.

III. STATUS OF CLAIMS

Claims 1-7, 9-15, 17-23, 25-31, 33-39, 41-47 and 49 are pending in the application.

Claims 1-7, 9-15, 17-23, 25-31, 33-39, 41-47 and 49 were rejected under 35 U.S.C. §103 as being obvious in view of U.S. Patent No. 6,401,242 to Eyer (hereinafter “Eyer”), and these rejections are being appealed.

IV. STATUS OF AMENDMENTS

No amendments to the claims have been made subsequent to the final Office Action.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The Applicants' invention is a system and method that provides program guide information to subscribers. In one embodiment, the method is applied to a satellite broadcasting system (600), as illustrated in FIG. 2 (reproduced below). The satellite broadcasting system (600) has a first satellite (602) broadcasting a first signal (650) having a first set of program material and first program guide information describing at least a portion of said set of program material, and a second satellite (604) broadcasting a second signal (652) having a second set of program material and second program guide information describing at least a portion of said second set of program material, wherein the first signal (650) and the second signal (652) each include service channels uniquely described by a service channel identifier.

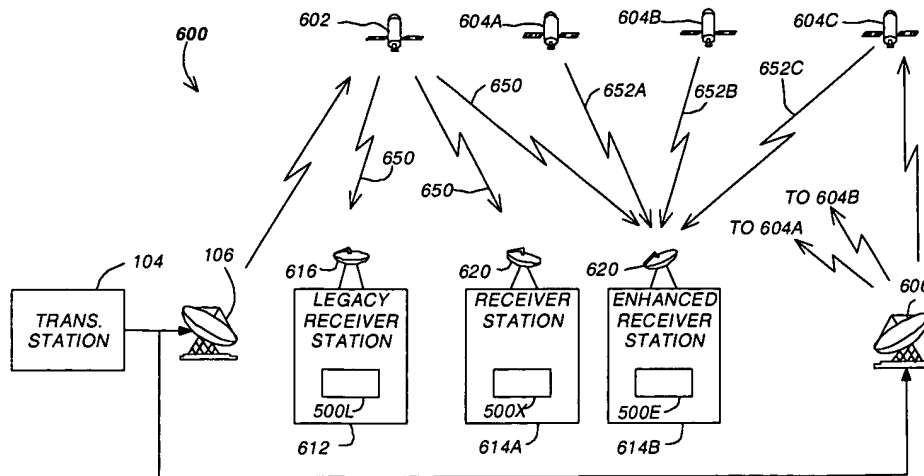


FIG. 6

In the broadcast system described above, one embodiment of the method comprises the steps of mapping at least a portion of the first program guide information to a first service channel of the first broadcast signal (block 902 of FIGs. 9A and 9B and page 24, lines 19-24), mapping at least a portion of the second program guide information to a second service channel of the first signal (block 904 of FIGs. 9A and 9B and page 24, lines 24-26), wherein the second service channel is logically offset from the first service channel (page 24, lines 26-30), and transmitting the first signal to the subscriber (page 23, lines 4-5 and block 906 of FIGs. 9A and 9B), wherein the second program guide information includes data identifying the service network transmitting the second program guide information (block 1002 of FIGs. 10A and 10B and page 27 lines 3-7) and wherein the first program guide information and the second program guide information is merged according to a comparison between the data and a receiver station configuration value (FIG. 10B and page 27, line 15- page 29, line 3).

In an analogous broadcasting system described above, another embodiment of the method comprises the steps of receiving the first signal (FIG. 10B, page 27, lines 15-17), and presenting the first program guide information and the second program guide information to a subscriber (block 1034 of FIG 10C, page 32, lines 1-4). The first signal includes a first service channel having at least a portion of the first program guide information (FIGs. 9A and 9B and page 24, lines 19-24); a

second service channel having at least a portion of the second program guide information signal (block 904 of FIGs. 9A and 9B and page 24, lines 24-26); and the second service channel is logically offset from the first service channel (page 24, lines 26-30). Further, the second program guide information includes data identifying the service network transmitting the second program guide information (block 1002 of FIGs. 10A and 10B and page 27 lines 3-7) and the first program guide information and the second program guide information is merged according to a comparison between the data and a receiver station configuration value (FIG. 10B and page 27, line 15- page 29, line 3).

In an analogous broadcasting system described above, another embodiment of the invention is evidenced by an apparatus for providing at least a portion of the second program guide information to a receiver station receiving the first signal. The apparatus comprises a program guide subsystem (item 206 in FIG. 2, further disclosed in FIG. 3 and discussed in page 8, line 14 - page 10, line 2 of the specification) for mapping at least a portion of the first program guide information to a first service channel of the first broadcast signal, and mapping at least a portion of the second program guide information to a second service channel of the first broadcast signal, wherein the second service channel is logically offset from the first service channel (disclosed in the specification as described above); and a transmitter (block 222 of FIG. 2, discussed at page 10, line 17) for transmitting the first signal to the receiver station (block 110 of FIG. 1 and page 6, line 9 of the specification); wherein the second program guide information includes data identifying the service network transmitting the second program guide information and wherein the first program guide information and the second program guide information is merged according to a comparison between the data and a receiver station configuration value (see block 1002 of FIGs. 10A and 10B and page 27 lines 3-7; and FIG. 10B and page 27, line 15- page 29, line 3).

In an analogous broadcasting system described above, another embodiment of the invention is evidenced by an apparatus for obtaining at least a portion of the second program guide information via the first signal. The apparatus comprises a tuner (block 504 of FIG. 5 and page 11, line 8) for receiving the first signal (FIG. 10B, page 27, lines 15-17), and a presentation device (page 26, lines 5-6) for presenting the first program guide information and the second program guide information to a subscriber (block 1034 of FIG 10C, page 32, lines 1-4). The first signal includes a

first service channel having at least a portion of the first program guide information (FIGs. 9A and 9B and page 24, lines 19-24); a second service channel having at least a portion of the second program guide information signal (block 904 of FIGs. 9A and 9B and page 24, lines 24-26); and the second service channel is logically offset from the first service channel (page 24, lines 26-30). Further, the second program guide information includes data identifying the service network transmitting the second program guide information (block 1002 of FIGs. 10A and 10B and page 27 lines 3-7) and the first program guide information and the second program guide information is merged according to a comparison between the data and a receiver station configuration value (FIG. 10B and page 27, line 15- page 29, line 3).

In an analogous broadcasting system described above, embodiments of the invention are also described by the structures, materials, or acts corresponding to the following:

Claim(s)	Structure(s), material(s), or act(s) corresponding to:	Found At
33	means for mapping at least a portion of the first program guide information to a first service channel of the first broadcast signal	(item 206 in FIG. 2, further disclosed in FIG. 3 and discussed in page 8, line 14 - page 10, line 2 of the specification)
33	means for mapping at least a portion of the second program guide information to a second service channel of the first broadcast signal, wherein the second service channel is logically offset from the first service channel	(item 206 in FIG. 2, further disclosed in FIG. 3 and discussed in page 8, line 14 - page 10, line 2 of the specification)
33	means for mapping at least a portion of the second program guide information to a second service channel of the first broadcast signal, wherein the second service channel is logically offset from the first service channel	(item 206 in FIG. 2, further disclosed in FIG. 3 and discussed in page 8, line 14 - page 10, line 2 of the specification)
41	means for receiving the first signal, wherein the first signal includes:	(block 504 of FIG. 5 and page 11, line 8)

Claim(s)	Structure(s), material(s), or act(s) corresponding to:	Found At
41	means for mapping at least a portion of the second program guide information to a second service channel of the first broadcast signal, wherein the second service channel is logically offset from the first service channel	(item 206 in FIG. 2, further disclosed in FIG. 3 and discussed in page 8, line 14 - page 10, line 2 of the specification)

In an analogous broadcasting system described above, embodiments of the invention are also described by a signal embodied in a carrier wave, the signal produced by performing the method steps of mapping at least a portion of the first program guide information to a first service channel of the first broadcast signal (block 902 of FIGs. 9A and 9B and page 24, lines 19-24), mapping at least a portion of the second program guide information to a second service channel of the first signal (block 904 of FIGs. 9A and 9B and page 24, lines 24-26), wherein the second service channel is logically offset from the first service channel (page 24, lines 26-30), and transmitting the first signal (page 23, lines 4-5 and block 906 of FIGs. 9A and 9B), wherein the second program guide information includes data identifying the service network transmitting the second program guide information (block 1002 of FIGs. 10A and 10B and page 27 lines 3-7) and wherein the first program guide information and the second program guide information is merged according to a comparison between the data and a receiver station configuration value (FIG. 10B and page 27, line 15- page 29, line 3).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 1-7, 9-15, 17-23, 25-31, 33-39, 41-47 and 49 are patentable under 35 U.S.C. § 103(a) over Eyer.

VII. ARGUMENT

A. The References

1. *The Eyer Reference*

U.S. Patent No. 6,401,242, issued June 4, 2002 to Eyer et al. discloses a method and apparatus for designating a preferred source to avoid duplicative programming services. Interactive Program Guide (IPG) data for television is delivered to integrated receiver-decoders (IRDs) in a decoder population via, for example, a satellite network. The IPG data provides scheduling information for global and local programming services which are carried via the satellite network as well as another network such as a CATV network or a terrestrial broadcast network. Each IRD is assigned to an IPG region using unit addressing. At the IRD, IPG data is filtered so that only the global data and the region-specific data for the IRD's IPG region is retained and processed by the IRD. Channel map data is also delivered to the IRDs so that bundles of IRD data can be filtered out using firmware filtering to discard program sources that are not present in the channel map. The IRD data which is retained after filtering is used to provide scheduling information via an on-screen display. A preferred source may be designated when there are duplicative channels on the different networks.

B. Claims 1-7, 9-15, 17-23, 25-31, 33-39, 41-47 and 49 are Patentable Under 35 U.S.C. § 103(a) over Eyer

1. *Preliminary Statement*

Claims 1-7, 9-15, 17-23, 25-31, 33-39, 41-47 and 49 were initially rejected as unpatentable under 35 U.S.C. § 102(e) over Eyer. In making this rejection, the Examiner argued that the “station names or IDs” of the Eyer reference were analogous to the “data identifying the service network transmitting the second program guide information.”

In the Applicants' Appeal Brief filed March 27, 2006, the Applicants pointed out why the “station names or IDs” were not analogous to the “data identifying the service network transmitting the second program guide information.”

Subsequently, the Examiner reopened prosecution, issuing a Final Office Action rejecting the Applicants' claims under 35 U.S.C. § 103(a), and arguing that Eyer's “region ID” is either

analogous to the Applicants’ “data identifying the service network transmitting the second program guide information” or that Eyer’s “region ID” rendered such data obvious under 35 U.S.C. § 103(a).

So that the Board fully understands the differences between Eyer and the Applicants’ invention, this Appeal Brief includes the arguments presented in response to the initial rejection under 35 U.S.C. § 102(e), as well as the arguments presented in response to the new grounds for rejection under 35 U.S.C. § 103(a). If the Board does not wish to review the rejections and arguments presented with regard to the rejection under 35 U.S.C. § 102(e), they may simply skip to heading VII(B)(4-6), in which the new grounds for rejection are addressed:

With Respect to Claim 1: Claim 1 recites:

In a broadcasting system having a first service network broadcasting a first signal having a first set of program material and first program guide information describing at least a portion of said first set of program material, and a second service network broadcasting a second signal having a second set of program material and second program guide information describing at least a portion of said second set of program material, wherein the first broadcast signal and the second broadcast signal each include service channels uniquely described by a service channel identifier, a method of providing at least a portion of the second program guide information to a receiving station receiving the first signal, comprising the steps of:
mapping at least a portion of the first program guide information to a first service channel of the first broadcast signal;
mapping at least a portion of the second program guide information to a second service channel of the first broadcast signal, wherein the second service channel is logically offset from the first service channel; and
transmitting the first signal to the receiving station;
wherein the second program guide information includes data identifying the service network
transmitting the second program guide information and wherein the first program guide information and the second program guide information is merged according to a comparison between the data and a receiver station configuration value.

2. *The First Office Action and the Applicant’s Response*

In rejecting claim 1, the first Office Action argued that Eyer discloses claim one’s “*service network transmitting the second program guide information*” as follows:

...where the Local-IPG data includes station names or IDs, such as, ABC, NBC, CBS, CNN, Disney channel, etc., (fig. 2, col. 5, lines 60-67, col. 7, lines 36-45, and col. 9, lines 35-39) “data identifying the service network” transmitting the Local-IPG data and the Global-IPG data and the Local-IPG data is merged according to a comparison between the data and the IRD configuration value such as an address, identification number, geographical location, etc. associated with the IRD (col. 8, lines 57-67 and col. 10, lines 10-38). (recited on page 5, first full paragraph of the Final Office Action)

The Applicants pointed out that the station names or IDs referred to (ABC, NBC, CBS, etc.) do not identify the *service network transmitting the second program guide information*. Instead, they are *source identifiers* that indicate origin of the source material.

We refer to the portions of the Eyer reference upon which the Examiner relies. First, FIG. 2:

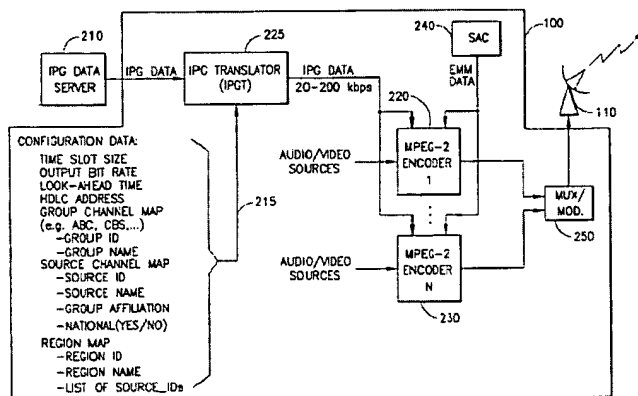


FIG.2

FIG. 2 simply refers to a "SOURCE ID" "SOURCE NAME." The "SOURCE IDENTIFIER", however, does not *identify the service network transmitting the second program guide information* as claim 1 recites, but rather, identifies the source of the underlying program material. This is made clear in the Eyer reference as follows:

In a second type of filtering, at each decoder, the IPG data may be filtered according to channel map data to enable each decoder to recover IPG data corresponding to channels accessible to that decoder while ignoring IPG data corresponding to channels not accessible to that decoder. Channel map data provides a correspondence between the programming services and a channel identifier which is displayed to the user, such as a channel number, "**source identifier**" which identifies the programming service provider and/or station identifier (e.g., ABC, NBC). The channel map data may be in the form of a lookup table which associates carrier frequencies of the programming services with the corresponding identifier. For digital services, the channel map also indicates which programming service within the digital multiplex is to be associated with that channel. For example, an IRD may filter IPG data for a global programming service which is not transmitted or otherwise not available to the IRD, for example, due to operator preference or limited channel capacity in the cable network. (col. 4, lines 38-56, emphasis added)

The first Office Action also argued that the following discloses features of claim 1:

The IPG data provides program title, program description, and scheduling information for global (e.g., non-region-specific) programming, such as network programs (e.g., ABC, NBC, CBS, FOX) and other global satellite offerings (e.g., The Disney Channel, Nickelodeon, etc.) as well as scheduling information for region-specific programming, such as local news programs by independent stations or local network affiliates, and local access programs. (col. 5, lines 60-67)

The Applicants respectfully disagreed because the foregoing passage does not teach second program guide information identifying the service network transmitting the second program guide information.

The first Office Action further argued that the following discloses features of claim one:

For example, a "preferred source" data bit which is delivered to the IRDs can indicate which cable channels are preferred sources with a "1", while non-preferred cable channels are designated with a "0". Thus, if the duplicative channel "CNN" is received via both the satellite network and the CATV network, and the CATV channel is designated as a preferred source, the CATV channel will be displayed when selected by the user in lieu of the satellite channel. The "CNN" service carried on satellite will not be accessible by the user, even though it is available to the IRD's tuner/demodulator. (col. 7, lines 36-45)

The Applicants again respectfully disagreed. The foregoing describes how the Eyer system handles duplication of channels ... it does not disclose second program guide information identifying the service network transmitting the second program guide information.

Finally, the first Office Action relies on the following passage:

Specifically, the channel map provides a table which correlates three items, namely a user channel number (e.g., channel 10 for ABC), a physical location the received data stream, such as a PID, and a source identifier which is associated with each programming service. (col. 9, lines 35-39)

Again, the "source identifier" indicates the source of the underlying program material, not the service network transmitting second program guide information, as mandated by claim one.

The first Office Action also argued that the feature of merging the first program guide information and the second program guide information according to a comparison between the data and the receiver station value is disclosed as follows:

“Global-IPG data and the Local-IPG data is merged according to a comparison between the data and IRD 130 configuration value such as an address, identification number, geographical location, etc., associated with IRD 130.”

and relying on the following portions of the Eyer reference:

Thus, the IPG data which is received by the microprocessor 170 provides scheduling information for the global programming services, and for region-specific programming services for the IPG region of the particular IRD. In accordance with the present invention, regional IPG data is multicast addressed to IRDs in different IPG regions to allow each IRD to recover only the IPG data for its region. This reduces the amount of IPG data that must be processed by microprocessor 170, thereby reducing memory and CPU requirements, while still providing the user with IPG information for all programming available to the user's IRD. (col. 8, lines 57-67)

FIG. 4 illustrates the transmission and reception of global and regional IPG data in accordance with the present invention. IPG data bundles which are broadcast, e.g., over a satellite network to a user's home, include global IPG data in a bundle 0, or B0 (400), described below in greater detail, as well as IPG data for a specific IPG region, e.g., region A, in an associated bundle 1 or B1 (405), IPG data for a region B in an associated bundle B1 (410), and IPG data for a region C in an associated bundle B1 (415). Regions A, B and C are different IPG regions which are served by a common satellite broadcast network.

Each IRD receives the same global and region-specific IPG data bundles. However, in accordance with the present invention, IRD data bundles are filtered out in hardware based on multicast addresses so a specific IRD only needs to store and process IPG data for its region, along with the global IPG data. For example, the received bundles after filtering for an IRD in region A include only B0 (400) and B1 (405), the received bundles after filtering for an IRD in region B include only B0 (400) and B1 (410), and the received bundles after filtering for an IRD in region C include only B0 (400) and B1 (415).

Bundles allow an IRD to distinguish between two different IPG data blocks that are the same type of data (titles/schedules, for example) for the same time slot. Without the bundle numbers, the IRD can not distinguish between two data blocks of the same type and time slot, and would want to discard one as a duplicate. (col. 10, lines 10-38)

It is important to note that the first Office Action argues that the “source name” or “source identifier” described above was the “data identifying the service network transmitting the second program guide information.” Assuming *arguendo* that this is true (and for the reasons described above, it is not), that would require that first program guide information and second program guide information is merged according to a comparison between the “source name” or “source identifier” and a receiver configuration value. Plainly, this is not true. For example, the Eyer reference indicates that the “source name” would be, for example “ABC”. It would make no sense whatsoever to merge a program guide from one source and another source according to “ABC”. The reason for this nonsensical result is that the “source identifier” described in Eyer is not

analogous to the “program guide information identifying the service network transmitting the second program guide information”.

3. The Final Office Action and the Applicant’s Response

The Final Office Action disagreed with the foregoing arguments, stating:

“Eyer teaches receiving national or global EPG and regional or local EPG (figs 1, col.5 lines 44-67 and col. 8, lines 6-32). By definition, ABC, NBC, CBS are networks, and furthermore, ABC, NBC, and CBS identify the service network where the program(s) originate.”

The cited portions of the Eyer reference are reproduced below:

IPG data, including global data which describes programming broadcast by satellite and national CATV networks, and region-specific data which describes programming broadcast only by CATV networks found within an assigned IPG region, is provided in a satellite data stream for television decoders which receive both satellite and cable television (CATV) transmissions.

FIG. 1 illustrates the transmission and reception of data via satellite and CATV paths in accordance with the present invention. The illustration provides a high-level functional overview of the present invention. A satellite multiplexer (MUX), modulator and encoder 100 receives IPG data for both global and local programming services (e.g., sources). IPG data from hundreds or even thousands of sources may be included. Ideally, IPG data for every program which is available via satellite and CATV is provided.

The IPG data provides program title, program description, and scheduling information for global (e.g., non-region-specific) programming, such as network programs (e.g., ABC, NBC, CBS, FOX) and other global satellite offerings (e.g., The Disney Channel, Nickelodeon, etc.) as well as scheduling information for region-specific programming, such as local news programs by independent stations or local network affiliates, and local access programs. (col. 5, lines 44-67)

The IPG translator 220 also receives configuration data, which includes associated parameters such as time slot size, output bit rate, look-ahead time, high-level data link controller (HDLC) address, group channel map (including group ID and group name), source channel map (including source ID, source name, group affiliation, and national or global data indicator), and a region map (including region ID, region name, and list of source IDs). A source ID is a number uniquely assigned to each program source in the system, and is used as an identifying reference in the IPG database.

The IPGT provides a continuous flow of IPG data at typically 20-200 kbps to a plurality of encoders, such as MPEG-2 encoders 1, . . . , N (220, . . . , 230). While MPEG-2 encoders are shown, other digital transport standards may be used. The encoders 220, . . . , 230 encode audio and video data from global and local programming services.

The encoders 220, . . . , 230 also receive Entitlement Management Message (EMM) data from a Subscriber Authorization Center (SAC) 240. This data, which is appended to the various programming services, authorizes the decoders to receive particular programming services, for example, according to a tiered marketing scheme. The encoders 220 and 230 output the programming services, IPG data, and EMM data to a MUX and

modulation function 250 to provide a signal which is suitable for transmission by the transmitter 110. (col. 8, lines 6-32)

The Applicants respond:

The Applicants agree that ABC, NBC, and CBS are “networks”. However, they are not “service networks” within the meaning of claim one.

The preamble of claim 1 states that the first service network transmits a first signal having a first set of program material and first program guide information describing at least a portion of the first set of program material, and that the first broadcast signal has service channels uniquely identified by a service channel identifier. Let’s assume that the first service network is ABC.

Claim 1 also recites that the second service network transmits a second signal having a second set of program material and second program guide information describing at least a portion of the second program material, and that the second broadcast signal has service channels uniquely identified by a service channel identifier. Let’s assume that the second service network is NBC.

The body of claim 1 then recites that at least a portion of the first program guide information (ABC’s) is mapped to a first service channel of the first broadcast signal that is broadcast (by ABC) to the receiving station.

Nothing in Eyer suggests that ABC broadcasts a program guide on one of its service channels (presumably, one of the 2-13 channels of a television set). Even if it did, the body of the claim also recites that at least a portion of the second program guide information (NBC’s) is mapped to a second service channel (another of the 2-13 channels) of the first broadcast signal (broadcast by ABC) wherein the second service channel is logically offset from the first service channel. This would mean that ABC is broadcasting, on one of its channels, program guide information for NBC’s programs. Clearly, this is not the case. The reason the foregoing description doesn’t work is simple ... it is because ABC, NBC, and CBS are not analogous to service networks.

The Final Office Action also argues:

“Furthermore, in situation where the service network, such as ABC is within the global and regional EPGs, Eyer uses duplicates to eliminate one from the other. Hence, applicant’s arguments do not over the prior art of record Eyer, as Eyer’s reference still meets the independent claims, is proper and maintained as discussed below”

The Applicants are unsure as to the meaning of this argument. It appears as if the Examiner is arguing that the two program guides are merged, but this does not address all of the features of the last clause of claim 1. Accordingly, the Applicants traverse.

Claims 9, 17, 25, 33, 41, and 49 recite features analogous to those of claim 1 and are patentable for the same reasons.

With Respect to Claims 2, 10, 18, 26, 33, and 42: Claims 2, 10, 18, 26, 33, and 42 recite that the second service channel is logically offset by an amount specified in the first program guide information. The Final Office Action argues that this is disclosed as follows:

An IPG translator (IPGT) configuration parameter, Source_Channel_Map, defines and describes program sources included in the downloaded IPG database. To differentiate between national and local sources, a flag "National" is used with following syntax.

```

45 Source_Channel_Map - LISTON /* One set of entries per source */
   <Source ID>, /* <Integer> <65536 */
   <Source Name>, /* <X-String> e.g. KPBS, A&E */
   <Group Name>, /* <X-String> e.g. PBS */
   <National>, /* <Boolean> */
   <Display Group>, /* <Boolean> */
50 <Premium>, /* <Boolean> */
   <Priority>, /* <Boolean> */
   ; /* Marks end of list */

```

When "National" is true, the source is considered a national source for IPG purposes. Otherwise, the source is local.

Respectfully, the Applicants do not see how the foregoing discloses a second service channel logically offset by an amount specified in the first program guide information ... especially when to be consistent with the rejection of claim 1, the service channels would have to be channels transmitted by service network (e.g. ABC, NBC, and CBS).

With Respect to Claims 3-7, 11-15, 19-23, 27-31, 35-39, and 43-47: Dependent claims 3-7, 11-15, 19-23, 27-31, 35-39, and 43-47 incorporate the limitations of their related independent claims, and are therefore patentable on this basis. In addition, these claims recite novel elements even more remote from the cited references. Accordingly, the Applicants respectfully request that these claims be allowed as well.

4. *The Applicants' Claims are Patentable Over Eyer Under 35 U.S.C. § 103(a)*

A Final Office Action was mailed on June 30, 2006. This Final Office Action reopened prosecution and presented new ground(s) for rejection, namely, that the Applicants' claims are unpatentable over Eyer under 35 U.S.C. § 103(a). According to the Office Action:

"... Eyer further discloses where the second guide includes region ID and name which identifies the region transmitting the second program guide information. Hence it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Eyer to produce data identifying a service network transmitting the second program guide to enable the head end system or receiving station to identify and manage the EPGs that are received from the various EPG sources or service network as desired."

There are many problems with this rejection.

First, it does not correctly describe Eyer's region ID. The region ID does not "identify the region transmitting the second program guide information." Regions do not transmit anything. Transmitters located within regions may transmit information, but regions themselves do not.

Second, the region ID does not even identify transmitters that are transmitting second program guide information. Instead, the region ID is used to determine which information the IRD in a particular region will reject and which it will store:

The packet stream demultiplexer 334 also outputs packets of the IPG data to an IPG filter 335, which discards region-specific IPG data for regions other than the IPG region to which the IRD 300 is assigned, while passing IPG data for the IPG region to which the IRD is assigned to microprocessor 170. Filtering is implemented in hardware and is based on associated IPG region identifying data which is multicast addressed to the IRD 300. The filter 335 passes all IPG data for the global programming services, as that data is broadcast-addressed, not multicast-addressed.

Thus, the IPG data which is received by the microprocessor 170 provides scheduling information for the global programming services, and for region-specific programming services for the IPG region of the particular IRD. In accordance with the present invention, regional IPG data is multicast addressed to IRDs in different IPG regions to allow each IRD to recover only the IPG data for its region. This reduces the amount of IPG data that must be processed by microprocessor 170, thereby reducing memory and CPU requirements, while still providing the user with IPG information for all programming available to the user's IRD. (col. 8, lines 47-67)

While it is true that IPG data having a particular region ID may be transmitted to an IRD that is in the same region as the transmitter of the program data itself, this is not necessarily the case.

For example, consider a system in which a BBC broadcast is intended to be broadcast to one market but not another (e.g. Los Angeles, but not Huntsville). In this case, Eyer would associate a region ID with the IPG data so that Los Angeles based IRDs accept and store the information and Huntsville based IRDs reject it. But that does not mean that either the program itself or the IPG data related to it was transmitted from Los Angeles. The region ID is used to determine who *receives and stores* the information and describes where the IRD is *located*, not who transmitted the information itself.

Third, Office Action's conclusion does not follow from the introductory statement. Even if one assumes *arguendo*, that the region ID identifies the region transmitting the second program guide information, the Applicants fail how that supports the notion that someone skilled in the art would modify Eyer to transmit data to the IRD identifying the service network transmitting the second program guide. As described above, the region ID is used to filter incoming data to assure that the IRD only receives data regarding channels that are supposed to be available in that particular region. How such a change would "enable the head end system to identify and manage the EPGs that are received from the various EPG sources" is anything but clear. In fact, it does not appear that Eyer has any reason to care which service network transmitted the second program guide information.

5. *Eyer Also Fails to Disclose the Mapping Described in Claim 1*

Claim 1 also recites:

mapping at least a portion of the first program guide information to a first service channel of the first broadcast signal; and
mapping at least a portion of the second program guide information to a second service channel of the first broadcast signal, wherein the second service channel is logically offset from the first service channel

In other words, first program guide information is mapped to a first service channel of the first broadcast signal and second program guide information is mapped to a second service channel of the first broadcast signal that is offset from the first service channel.

Eyer does not transmit program guide information on different channels. Instead, it transmits program guide information in two bundles, but both bundles are transmitted on the same channel:

Each IRD receives the same global and region-specific IPG data bundles. However, in accordance with the present invention, IRD data bundles are filtered out in hardware based on multicast addresses so a specific IRD only needs to store and process IPG data for its region, along with the global IPG data. For example, the received bundles after filtering for an IRD in region A include only B0 (400) and B1 (405), the received bundles after filtering for an IRD in region B include only B0 (400) and B1 (410), and the received bundles after filtering for an IRD in region C include only B0 (400) and B1 (415).

Bundles allow an IRD to distinguish between two different IPG data blocks that are the same type of data (titles/schedules, for example) for the same time slot. Without the bundle numbers, the IRD can not distinguish between two data blocks of the same type and time slot, and would want to discard one as a duplicate.

The use of bundled data blocks allows regional IPG data to be multicast addressed to the IRDs in the corresponding IPG regions while still broadcasting national (e.g., global) IPG data. The scheme involves addressing pages of IPG data by time slot, filtering data slots and pages using firmware and/or hardware filtering, delivering the data in a preformatted manner, and using separate data blocks to deliver title information and program description information. Multicast filtering is suitable here when all the IPG data is in one PID at rates of 20-200 kbps.

Time slots are numbered sequentially in the preferred embodiment, e.g., starting at day zero of the global positioning satellite (GPS) time reference. Virtually any time slot size can be used, however, slot sizes of four, six, eight, twelve or twenty-four hours are preferable to simplify processing.

In a preferred embodiment, all regional IPG data is provided within one PID. Hardware filtering is used in the IRD to filter by IPG region. Second-level filtering in firmware is employed to delete IPG data corresponding to channels not available to the IRD, thus saving RAM. For IRDs with access to cable-delivered programming, the list of available cable channels (e.g., the cable channel map) is used for this firmware filtering. Cable channel maps are delivered via the satellite path, and are addressed by group addressing methods to IRDs associated with particular IRD regions. (col. 10, lines 21-65)

The Office Action relies on the following to suggest that separate service channels are used:

The parameter `Trickle_Bundle_Repetition_Frequencies` specifies the frequency at which each bundle (for all block types) other than bundle 0, are transmitted in each transmission cycle. The repetition frequency for bundle 0 is always one bundle per cycle, that is, all blocks of bundle 0 are transmitted once per cycle. Therefore, a transmission cycle is defined as the interval between two consecutive transmission start times for bundle 0. Bundle 0 is defined below in greater detail in connection with data block bundling.

Up to fifteen pairs of `<Bundle_ID>` and `<Inverse_Frequency>` can be specified for each IPG provider. Unused entries are null, i.e., a series of commas. The `bundle_ID` values are as defined in the `IPG_data_block ()` structure, except that the repetition frequency for `bundle_ID 0` cannot be specified because, by definition, it is always one bundle per cycle. If no repetition frequency is specified for any bundle to be transmitted, a default frequency of once per cycle is used.

Note that the integer value, `<Inverse_Frequency>`, specified is the inverse of the repetition frequency. For example, the pair `Bundle_ID=1` and `Inverse_Frequency=3` specifies a repetition frequency of one-third, i.e., once every three cycles for bundle 1. In other words, with every transmission of all blocks of a 0-valued `bundle_ID`, only one third of the blocks with `bundle_ID` equal to 1 are transmitted.

One set of values are assigned to each IPG Provider. The system may support one Provider per IPGT, and

only bundle_ID values of 0 and 1. As a result, only one pair of integer values are present to specify the repetition frequency for bundle 1, followed by fourteen pairs of null entries. (col. 17, line 49 - col. 18, line 1)

But the foregoing simply describes multiple bundles ... not multiple service channels.

Claims 9, 17, 25, 33, 41, and 49 recite features analogous to those of claim 1 and are patentable for the same reasons.

6. The Dependent Claims are Patentable over Eyer as Well

With Respect to Claims 2, 10, 18, 26, 33, and 42: Claims 2, 10, 18, 26, 33, and 42 recite that the second service channel is logically offset by an amount specified in the first program guide information. The Final Office Action argues that this is disclosed as follows:

40 An IPG translator (IPGT) configuration parameter, Source_Channel_Map, defines and describes program sources included in the downloaded IPG database. To differentiate between national and local sources, a flag "National" is used with following syntax.

```
45 Source_Channel_Map - LISTON /* One set of entries per source */
   <Source ID>, /* <Integer> <65536 */
   <Source Name>, /* <X-String>e.g. KPBS, A&E */
   <Group Name>, /* <X-String>e.g. PBS */
   <National>, /* <Boolean>*/
   <Display Group>, /* <Boolean>*/
50 <Premium>, /* <Boolean>*/
   <Priority>, /* <Boolean>*/
   ; /* Marks end of list */
```

When "National" is true, the source is considered a national
55 source for IPG purposes. Otherwise, the source is local.

Respectfully, the Applicants do not see how the foregoing discloses a second service channel logically offset by an amount specified in the first program guide information. All the foregoing describes is the make up of the source control map.


With Respect to Claims 3-7, 11-15, 19-23, 27-31, 35-39, and 43-47: Dependent claims 3-7, 11-15, 19-23, 27-31, 35-39, and 43-47 incorporate the limitations of their related independent claims, and are therefore patentable on this basis. In addition, these claims recite novel elements even more remote from the cited references. Accordingly, the Applicants respectfully request that these claims be allowed as well.

VIII. CONCLUSION

In light of the above arguments, Appellants respectfully submit that the cited references do not anticipate nor render obvious the claimed invention. More specifically, Appellants' claims recite novel physical features which patentably distinguish over any and all references under 35 U.S.C. §§ 102 and 103. As a result, a decision by the Board of Patent Appeals and Interferences reversing the Examiner and directing allowance of the pending claims in the subject application is respectfully solicited.

Respectfully submitted,

Date: August 29, 2006

By: 
Name: Georgann S. Grunebach
Reg. No. 33,179

The DIRECTV Group, Inc.
CA/LA1/A109
2250 E. Imperial Highway
P. O. Box 956
El Segundo CA 90245

Telephone No. (310) 964-4615

CLAIMS APPENDIX

1. (PREVIOUSLY PRESENTED) In a broadcasting system having a first service network broadcasting a first signal having a first set of program material and first program guide information describing at least a portion of said first set of program material, and a second service network broadcasting a second signal having a second set of program material and second program guide information describing at least a portion of said second set of program material, wherein the first broadcast signal and the second broadcast signal each include service channels uniquely described by a service channel identifier, a method of providing at least a portion of the second program guide information to a receiving station receiving the first signal, comprising the steps of:

- mapping at least a portion of the first program guide information to a first service channel of the first broadcast signal;
- mapping at least a portion of the second program guide information to a second service channel of the first broadcast signal, wherein the second service channel is logically offset from the first service channel; and
- transmitting the first signal to the receiving station;

wherein the second program guide information includes data identifying the service network transmitting the second program guide information and wherein the first program guide information and the second program guide information is merged according to a comparison between the data and a receiver station configuration value.

2. (ORIGINAL) The method of Claim 1, wherein the second service channel is logically offset by an amount specified in the first program guide information.

3. (ORIGINAL) The method of Claim 1, wherein the portion of the second program guide information is transmitted at a different rate than the first program guide information.

4. (ORIGINAL) The method of Claim 1, wherein the first program guide information describes program material to be broadcast during a first time period, and the second program guide information describes program material to be broadcast during a second time period.

5. (ORIGINAL) The method of Claim 4, wherein the second time period is of different length than the first time period.

6. (ORIGINAL) The method of Claim 1, further comprising the steps of:
receiving the first signal; and
storing the first program guide information and the second program guide information for subsequent retrieval.

7. (ORIGINAL) The method of Claim 6, further comprising the steps of:
merging the first program guide information and the second program guide information to produce a merged program guide; and
retrieving the merged program guide in response to a subscriber request.

8. (CANCELED)

9. (PREVIOUSLY PRESENTED) In a broadcasting system having a first service network broadcasting a first signal having a first set of program material and first program guide information describing at least a portion of said first set of program material, and a second service network broadcasting a second signal having a second set of program material and second program guide information describing at least a portion of said second set of program material, wherein the first broadcast signal and the second broadcast signal each include service channels uniquely described by a service channel identifier, a method of obtaining at least a portion of the second program guide information via the first signal, comprising the steps of:

receiving the first signal, wherein the first signal includes:

a first service channel having at least a portion of the first program guide information;

a second service channel having at least a portion of the second program guide information;

wherein the second service channel is logically offset from the first service channel;

and

presenting the first program guide information and the second program guide information to a subscriber;

wherein the second program guide information includes data identifying the service network transmitting the second program guide information and wherein the first program guide information and the second program guide information is merged according to a comparison between the data and a receiver station configuration value.

10. (ORIGINAL) The method of Claim 9, wherein the second service channel is logically offset by an amount specified in the first program guide information.

11. (ORIGINAL) The method of Claim 9, wherein the portion of the second program guide information is received at a different rate than the first program guide information.

12. (ORIGINAL) The method of Claim 9, wherein the first program guide information describes program material to be broadcast during a first time period, and the second program guide information describes program material to be broadcast during a second time period.

13. (ORIGINAL) The method of Claim 12, wherein the second time period is of different length than the first time period.

14. (ORIGINAL) The method of Claim 9, further comprising the steps of:
storing the first program guide information and the second program guide information for subsequent retrieval.

15. (ORIGINAL) The method of Claim 14, further comprising the steps of:
merging the first program guide information and the second program guide information to
produce a merged program guide; and
retrieving the merged program guide in response to a subscriber request.

16. (CANCELED)

17. (PREVIOUSLY PRESENTED) In a broadcasting system having a first service network broadcasting a first signal having a first set of program material and first program guide information describing at least a portion of said first set of program material, and a second service network broadcasting a second signal having a second set of program material and second program guide information describing at least a portion of said second set of program material, wherein the first broadcast signal and the second broadcast signal each include service channels uniquely described by a service channel identifier, an apparatus of providing at least a portion of the second program guide information to a receiver station receiving the first signal, comprising:

a program guide subsystem for mapping at least a portion of the first program guide information to a first service channel of the first broadcast signal, and mapping at least a portion of the second program guide information to a second service channel of the first broadcast signal, wherein the second service channel is logically offset from the first service channel; and

a transmitter for transmitting the first signal to the receiver station;

wherein the second program guide information includes data identifying the service network transmitting the second program guide information and wherein the first program guide information and the second program guide information is merged according to a comparison between the data and a receiver station configuration value.

18. (ORIGINAL) The apparatus of Claim 17, wherein the second service channel is logically offset by an amount specified in the first program guide information.

19. (ORIGINAL) The apparatus of Claim 17, wherein the portion of the second program guide information is transmitted at a different rate than the first program guide information.

20. (ORIGINAL) The apparatus of Claim 17, wherein the first program guide information describes program material to be broadcast during a first time period, and the second program guide information describes program material to be broadcast during a second time period.

21. (ORIGINAL) The apparatus of Claim 20, wherein the second time period is of different length than the first time period.

22. (ORIGINAL) The apparatus of Claim 17, further comprising:
a tuner for receiving the first signal; and
a memory for storing the first program guide information and the second program guide information for subsequent retrieval.

23. (ORIGINAL) The apparatus of Claim 22, wherein the program guide subsystem further comprises:

a module for merging the first program guide information and the second program guide information to produce a merged program guide, and for retrieving the merged program guide in response to a subscriber request.

24. (CANCELED)

25. (PREVIOUSLY PRESENTED) In a broadcasting system having a first service network broadcasting a first signal having a first set of program material and first program guide information describing at least a portion of said first set of program material, and a second service network broadcasting a second signal having a second set of program material and second program guide information describing at least a portion of said second set of program material, wherein the first broadcast signal and the second broadcast signal each include service channels uniquely described by a service channel identifier, an apparatus for obtaining at least a portion of the second program guide information via the first signal, comprising the steps:

a tuner for receiving the first signal, wherein the first signal includes:

a first service channel having at least a portion of the first program guide information;

a second service channel having at least a portion of the second program guide information;

wherein the second service channel is logically offset from the first service channel;

and

a presentation device for providing the first program guide information and the second program guide information to a subscriber;

wherein the second program guide information includes data identifying the service network transmitting the second program guide information and wherein the first program guide information and the second program guide information is merged according to a comparison between the data and a receiver station configuration value.

26. (ORIGINAL) The apparatus of Claim 25, wherein the second service channel is logically offset by an amount specified in the first program guide information.

27. (ORIGINAL) The apparatus of Claim 25, wherein the portion of the second program guide information is received at a different rate than the first program guide information.

28. (ORIGINAL) The apparatus of Claim 25, wherein the first program guide information describes program material to be broadcast during a first time period, and the second program guide information describes program material to be broadcast during a second time period.

29. (ORIGINAL) The apparatus of Claim 28, wherein the second time period is of different length than the first time period.

30. (ORIGINAL) The apparatus of Claim 25, further comprising:
a memory for storing the first program guide information and the second program guide information for subsequent retrieval.

31. (ORIGINAL) The apparatus of Claim 30, further comprising:
a module for merging the first program guide information and the second program guide information to produce a merged program guide and for retrieving the merged program guide in response to a subscriber request.

32. (CANCELED)

33. (PREVIOUSLY PRESENTED) In a broadcasting system having a first service network broadcasting a first signal having a first set of program material and first program guide information describing at least a portion of said first set of program material, and a second service network broadcasting a second signal having a second set of program material and second program guide information describing at least a portion of said second set of program material, wherein the first broadcast signal and the second broadcast signal each include service channels uniquely described by a service channel identifier, an apparatus for providing at least a portion of the second program guide information to a receiver station receiving the first signal, comprising:

means for mapping at least a portion of the first program guide information to a first service channel of the first broadcast signal;

means for mapping at least a portion of the second program guide information to a second service channel of the first broadcast signal, wherein the second service channel is logically offset from the first service channel; and

means for transmitting the first signal to the receiver station;

wherein the second program guide information includes data identifying the service network transmitting the second program guide information and wherein the first program guide information and the second program guide information is merged according to a comparison between the data and a receiver station configuration value.

34. (ORIGINAL) The apparatus of Claim 33, wherein the second service channel is logically offset by an amount specified in the first program guide information.

35. (ORIGINAL) The apparatus of Claim 33, wherein the portion of the second program guide information is transmitted at a different rate than the first program guide information.

36. (ORIGINAL) The apparatus of Claim 33, wherein the first program guide information describes program material to be broadcast during a first time period, and the second program guide information describes program material to be broadcast during a second time period.

37. (ORIGINAL) The apparatus of Claim 36, wherein the second time period is of different length than the first time period.

38. (ORIGINAL) The apparatus of Claim 33, further comprising:
means for receiving the first signal; and
means for storing the first program guide information and the second program guide information for subsequent retrieval.

39. (ORIGINAL) The apparatus of Claim 38, further comprising:
means for merging the first program guide information and the second program guide information to produce a merged program guide; and
means for retrieving the merged program guide in response to a subscriber request.

40. (CANCELED)

41. (PREVIOUSLY PRESENTED) In a broadcasting system having a first service network broadcasting a first signal having a first set of program material and first program guide information describing at least a portion of said first set of program material, and a second service network broadcasting a second signal having a second set of program material and second program guide information describing at least a portion of said second set of program material, wherein the first broadcast signal and the second broadcast signal each include service channels uniquely described by a service channel identifier, an apparatus for obtaining at least a portion of the second program guide information via the first signal, comprising:

means for receiving the first signal, wherein the first signal includes:

a first service channel having at least a portion of the first program guide information;

a second service channel having at least a portion of the second program guide information;

wherein the second service channel is logically offset from the first service channel;
and

means for presenting the first program guide information and the second program guide information to a subscriber;

wherein the second program guide information includes data identifying the service network transmitting the second program guide information and wherein the first program guide information and the second program guide information is merged according to a comparison between the data and a receiver station configuration value.

42. (ORIGINAL) The apparatus of Claim 41, wherein the second service channel is logically offset by an amount specified in the first program guide information.

43. (ORIGINAL) The apparatus of Claim 41, wherein the portion of the second program guide information is received at a different rate than the first program guide information.

44. (ORIGINAL) The apparatus of Claim 41, wherein the first program guide information describes program material to be broadcast during a first time period, and the second program guide information describes program material to be broadcast during a second time period.

45. (ORIGINAL) The apparatus of Claim 44, wherein the second time period is of different length than the first time period.

46. (ORIGINAL) The apparatus of Claim 41, further comprising:
means for storing the first program guide information and the second program guide information for subsequent retrieval.

47. (ORIGINAL) The apparatus of Claim 46, further comprising:
means for merging the first program guide information and the second program guide information to produce a merged program guide; and
means for retrieving the merged program guide in response to a subscriber request.

48. (CANCELED)

49. (PREVIOUSLY PRESENTED) In a broadcasting system having a first service network broadcasting a first signal having a first set of program material and first program guide information describing at least a portion of said first set of program material, and a second service network broadcasting a second signal having a second set of program material and second program guide information describing at least a portion of said second set of program material, wherein the first broadcast signal and the second broadcast signal each include service channels uniquely described by a service channel identifier, a signal embodied in a carrier wave, the signal produced by performing the method steps of:

mapping at least a portion of the first program guide information to a first service channel of the first broadcast signal;

mapping at least a portion of the second program guide information to a second service channel of the first broadcast signal, wherein the second service channel is logically offset from the first service channel; and

transmitting the first signal;

wherein the second program guide information includes data identifying the service network transmitting the second program guide information and wherein the first program guide information and the second program guide information is merged according to a comparison between the data and a receiver station configuration value.

EVIDENCE APPENDIX

(none)

RELATED APPEALS AND INTERFERENCES APPENDIX

(none)